



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,440	02/17/2004	Sumio Kawai	OOCL-152 (6MHA-03S0555P1)	6170
26479	7590	10/16/2008	EXAMINER	
STRAUB & POKOTYLO 788 Shrewsbury Avenue TINTON FALLS, NJ 07724			AGGARWAL, YOGESH K	
			ART UNIT	PAPER NUMBER
			2622	
			MAIL DATE	DELIVERY MODE
			10/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/780,440	Applicant(s) KAWAI ET AL.	
	Examiner YOGESH K. AGGARWAL	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6,9 and 10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 2 is/are allowed.
- 6) ☒ Claim(s) 4,6,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/07/2008 has been entered.

Response to Arguments

2. Applicant's arguments filed 07/07/2008 have been fully considered but they are not persuasive.

Examiner's response:

3. Applicant argues regarding claim 4 that Independent claim 4 is not anticipated by the Kawai publication because the Kawai Publication does not teach a control circuit that first outputs a control signal for causing an optical element to undergo a low-order resonance vibration and then a control signal for causing the optical element to undergo a high-order resonance vibration. The Examiner respectfully disagrees. Kawai teaches this concept by changing the frequencies by $\lambda/3$ which is a different resonance frequency and of a different order (Paragraphs 36, 37, 42, 43, 45 and 48. Different vibrations are generated for example a vibration having a wavelength $1/3$ the wavelength of the previous vibration is used corresponding to different frequencies). Therefore as broadly as claimed Kawai meets the claimed limitations.

4. Applicant argues regarding claim 9 that Kawai fails to teach nodes of the standing wave vibration are successively shifted in position and number. The Examiner respectfully disagrees.

Art Unit: 2622

Figure 7 clearly show the nodes of a standing wave (1.5 wavelength) being shifted from one point to the other as a progressive wave. Therefore nodes of the standing wave vibration are successively shifted as claimed. The claim never recites position and number. A control circuit would be inherently taught.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 4, 6, 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawai (US PG-PUB # 20040012714).

[Claim 4]

Kawai teaches a photographing device provided with a dust removing mechanism comprising: a photographing optical system which forms an optical image of an object ([0025]; fig. 1, “2”); a photoelectric conversion element which converts the optical image into an electric signal ([0027], figure 1, “15”); an optical element arranged between the photographing optical system and the photoelectric conversion element in such a manner as to seal the photoelectric conversion element ([0029], figure 1, “17”); a piezoelectric element provided at a peripheral portion of the optical element ([0029], [0036]-[0039], figs. 1, 2a-b, “171” and “172”); a drive circuit which supplies a period drive signal to the piezoelectric element to vibrate the piezoelectric element, thereby vibrating the optical element ([0031], figure 3a shows a cyclic voltage); and a control

Art Unit: 2622

circuit which changes a frequency of the periodic drive signal to a plurality of frequencies close to two or more resonance frequencies different in order from each other (Paragraphs 36, 37, 42, 43, 45 and 48. Different vibrations are generated for example a vibration having a wavelength $1/3$ the wavelength of the previous vibration is used corresponding to different frequencies).

[Claim 9]

Kawai teaches a photographing device provided with a dust removing mechanism comprising: a photographing optical system which forms an optical image of an object ([0025]; fig. 1, “2”); a photoelectric conversion element which converts the optical image into an electric signal ([0027], figure 1, “15”); an optical element arranged between the photographing optical system and the photoelectric conversion element in such a manner as to seal the photoelectric conversion element ([0029], figure 1, “17”); a piezoelectric element provided at a peripheral portion of the optical element ([0029], [0036]-[0039], figs. 1, 2a-b, “171” and “172”); a drive circuit which supplies a period drive signal to the piezoelectric element to vibrate the piezoelectric element, thereby vibrating the optical element ([0031], figure 3a shows a cyclic voltage) a control circuit which causes the optical element to generate standing-wave vibration, and controls a frequency of the periodic drive signal to cause nodes of the standing-wave vibration to be successively shifted ([0048], figure 7).

[Claim 6]

Paragraph 36 teaches that frequency of vibration depends upon vibration modes and a primary bending vibration is produced as shown in figure 3c having one node. It is noted that a wave having a wavelength $1/3$ (Paragraph 45) of this will have at least two nodes.

[Claim 10]

Art Unit: 2622

The camera photographing device according to claim 9, wherein the control circuit controls the periodic drive signal to cause the nodes of the standing-wave vibration to be shifted at predetermined intervals ([0048], fig. 7).

Allowable Subject Matter

7. Claims 1 and 2 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOGESH K. AGGARWAL whose telephone number is (571)272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yogesh K Aggarwal/

Application/Control Number: 10/780,440

Page 6

Art Unit: 2622

Primary Examiner, Art Unit 2622